

Amendments to the Claims:

1. (Currently amended) A wireless communication system, comprising:
a transmitter circuit comprising an encoder circuit for transmitting a plurality of frames;
wherein each of the plurality of frames comprises a primary synchronization code and a secondary synchronization code; and
wherein the encoder circuit comprises:
a circuit for providing the primary synchronization code in response to a first sequence; and
a circuit for providing the secondary synchronization code in response to a second sequence and a third sequence;
wherein the second sequence is selected from a plurality of sequences, wherein each of the plurality of sequences is orthogonal with respect to all other sequences in the plurality of sequences; and
wherein the third sequence comprises a consecutively repeated subset sequence of bits from the first sequence.
2. (Original) The system of claim 1 wherein the first sequence comprises a hierarchical sequence.
3. (Original) The system of claim 1 wherein the first sequence comprises a Golay sequence.
4. (Original) The system of claim 1:
wherein the second sequence comprises a plurality of code words; and
wherein each of the plurality of code words is selected from a plurality of Hadamard sequences.
5. (Original) The system of claim 4 wherein the second sequence consists of fifteen of the code words.

6. (Original) The system of claim 5 wherein the plurality of Hadamard sequences are selected from a set of 256 Walsh sequences.
7. (Original) The system of claim 6:
wherein the 256 Walsh sequences have a defined order; and
wherein the plurality of Hadamard sequences comprise sixteen Hadamard sequences selected as every sixteenth sequence in the defined order.
8. (Original) The system of claim 4 wherein the second sequence consists of sixteen of the code words.
9. (Original) The system of claim 8 wherein the plurality of Hadamard sequences are selected from a set of 256 Walsh sequences.
10. (Original) The system of claim 6:
wherein the 256 Walsh sequences have a defined order; and
wherein the plurality of Hadamard sequences comprise seventeen Hadamard sequences selected as every eighth sequence in the defined order.
11. (Previously amended) The system of claim 1 wherein the circuit for providing the secondary synchronization code comprises:
a circuit for performing an exclusive OR operation between the second sequence and the third sequence; and
a circuit for providing the secondary synchronization code in response to the exclusive OR operation.
12. (Original) The system of claim 1:
wherein the primary synchronization code comprises 8-bit values A and B and complements of the values A and B;

wherein the value A comprises a sequence $A = \{ 1, 1, 1, 1, 1, 1, -1, -1 \}$;
wherein the value B comprises a sequence $B = \{ 1, -1, 1, -1, 1, -1, -1, 1 \}$; and
wherein the primary synchronization code comprises a 256-bit sequence $\{A, B, A, B, A, B, -A, -B, -A, -B, A, B, -A, -B, A, B, -A, -B, A, B, -A, -B, A, B, A, B\}$.

13. (Original) The system of claim 12:

wherein the second sequence comprises 256 bits; and

wherein the third sequence comprises 32 repeated instances of the value A.

14. (Previously amended) The system of claim 13 wherein the circuit for providing the secondary synchronization code comprises:

a circuit for performing an exclusive OR operation between the second sequence and the third sequence; and

a circuit for providing the secondary synchronization code in response to the exclusive OR operation.

15. (Original) The system of claim 14:

wherein the second sequence comprises a plurality of code words; and

wherein each of the plurality of code words is selected from a plurality of Hadamard sequences.

16. (Original) The system of claim 12:

wherein the second sequence comprises 256 bits;

wherein a complement of the value A is represented as $-A$; and

wherein the third sequence comprises a 256-bit sequence $\{-A, -A, -A, -A, A, -A, -A, A, -A, A, A, -A, -A, A, A, A, A, -A, -A, A, A, -A, A, -A, A, A, -A, A, A, A, -A, -A, A, A, A, A, -A, -A, A, A, -A, A, -A, A, -A\}$.

17. (Previously amended) The system of claim 16 wherein the circuit for providing the secondary synchronization code comprises:

a circuit for performing an exclusive OR operation between the second sequence and the third sequence; and

a circuit for providing the secondary synchronization code in response to the exclusive OR operation.

18. (Previously amended) The system of claim 17:

wherein the second sequence comprises a plurality of code words; and

wherein each of the plurality of code words is selected from a plurality of Hadamard sequences.

19. (Original) The system of claim 18:

wherein the plurality of Hadamard sequences are selected from a set of 256 Walsh sequences;

wherein the 256 Walsh sequences have a defined order; and

wherein the plurality of Hadamard sequences comprise seventeen Hadamard sequences selected as every eighth sequence in the defined order.

20. (Original) The system of claim 1:

wherein the primary synchronization code consists of 8-bit values A and B and complements of the values A and B;

wherein the value A comprises a sequence $A = \{ 1, 1, 1, 1, 1, 1, -1, -1 \}$;

wherein the value B comprises a sequence $B = \{ 1, -1, 1, -1, 1, -1, -1, 1 \}$;

wherein a value C is defined as a sequence $C = \{ A, -B \}$;

wherein the third sequence comprises a 256-bit sequence $\{ C, C, C, -C, C, C, -C, -C, C, -C, C, -C, -C, -C, -C, -C \}$.

21. (Previously amended) The system of claim 20 wherein the circuit for providing the secondary synchronization code comprises:
- a circuit for performing an exclusive OR operation between the second sequence and the third sequence; and
 - a circuit for providing the secondary synchronization code in response to the exclusive OR operation.
22. (Original) The system of claim 21:
- wherein the second sequence comprises a plurality of code words; and
 - wherein each of the plurality of code words is selected from a plurality of Hadamard sequences.
23. (Original) The system of claim 22:
- wherein the plurality of Hadamard sequences are selected from a set of 256 Walsh sequences;
 - wherein the 256 Walsh sequences have a defined order; and
 - wherein the plurality of Hadamard sequences comprise sixteen Hadamard sequences selected as every sixteenth sequence in the defined order.
24. (Previously amended) The system of claim 1 wherein the transmitter circuit comprises a CDMA transmitter.
25. (Previously amended) The system of claim 1 wherein the circuit for providing the secondary synchronization code comprises a storage circuit for storing the secondary synchronization code.
26. (Previously amended) The system of claim 25 wherein the secondary synchronization code stored by the storage circuit is derived from an exclusive OR operation between the second sequence and the third sequence.

27. (Currently amended) A method of forming a primary synchronization code and a secondary synchronization code for communication in a plurality of frames in a wireless communication system, comprising the steps of:
- providing the primary synchronization code in response to a first sequence; and
 - providing the secondary synchronization code in response to a second sequence and a third sequence; and
 - wherein the second sequence is selected from a plurality of sequences, wherein each of the plurality of sequences is orthogonal with respect to all other sequences in the plurality of sequences; and
 - wherein the third sequence comprises a consecutively repeated subset sequence of bits from the first sequence.
28. (Original) The method of claim 27 wherein the first sequence comprises a hierarchical sequence.
29. (Original) The method of claim 27 wherein the first sequence comprises a Golay sequence.
30. (Original) The method of claim 27:
- wherein the second sequence comprises a plurality of code words; and
 - wherein each of the plurality of code words is selected from a plurality of Hadamard sequences.
31. (Original) The method of claim 30 wherein the second sequence consists of fifteen of the code words.
32. (Original) The method of claim 31 wherein the plurality of Hadamard sequences are selected from a set of 256 Walsh sequences.

33. (Original) The method of claim 32:
wherein the 256 Walsh sequences have a defined order; and
wherein the plurality of Hadamard sequences comprise sixteen Hadamard sequences selected as every sixteenth sequence in the defined order.
34. (Original) The method of claim 30 wherein the second sequence consists of sixteen of the code words.
35. (Original) The method of claim 34:
wherein the 256 Walsh sequences have a defined order; and
wherein the plurality of Hadamard sequences comprise seventeen Hadamard sequences selected as every eighth sequence in the defined order.
36. (Original) The method of claim 27 wherein the step of providing the secondary synchronization code comprises:
performing an exclusive OR operation between the second sequence and the third sequence;
and
providing the secondary synchronization code in response to the exclusive OR operation.
37. (Original) The method of claim 27:
wherein the primary synchronization code comprises 8-bit values A and B and complements of the values A and B;
wherein the value A comprises a sequence $A = \{ 1, 1, 1, 1, 1, 1, -1, -1 \}$;
wherein the value B comprises a sequence $B = \{ 1, -1, 1, -1, 1, -1, -1, 1 \}$; and
wherein the primary synchronization code comprises a 256-bit sequence $\{ A, B, A, B, A, B, -A, -B, -A, -B, A, B, -A, -B, A, B, A, B, A, B, -A, -B, A, B, -A, -B, A, B, A, B, -A, -B, A, B, -A, -B, A, B, A, B \}$.

38. (Original) The method of claim 37:
wherein the second sequence comprises 256 bits; and
wherein the third sequence comprises 32 repeated instances of the value A.
39. (Original) The method of claim 38 wherein the step of providing the secondary synchronization code comprises:
performing an exclusive OR operation between the second sequence and the third sequence;
and
providing the secondary synchronization code in response to the exclusive OR operation.
40. (Original) The method of claim 39:
wherein the second sequence comprises a plurality of code words; and
wherein each of the plurality of code words is selected from a plurality of Hadamard sequences.
41. (Original) The method of claim 37:
wherein the second sequence comprises 256 bits;
wherein a complement of the value A is represented as $-A$; and
wherein the third sequence comprises a 256-bit sequence $\{-A, -A, -A, -A, A, -A, -A, A, -A, A, A, -A, A, A, A, A, -A, -A, -A, A, A, -A, A, A, -A, A, -A, A, -A\}$.
42. (Original) The method of claim 41 wherein the step of providing the secondary synchronization code comprises:
performing an exclusive OR operation between the second sequence and the third sequence;
and
providing the secondary synchronization code in response to the exclusive OR operation..
43. (Original) The method of claim 42:
wherein the second sequence comprises a plurality of code words; and

wherein each of the plurality of code words is selected from a plurality of Hadamard sequences.

44. (Original) The method of claim 43:

wherein the plurality of Hadamard sequences are selected from a set of 256 Walsh sequences;

wherein the 256 Walsh sequences have a defined order; and

wherein the plurality of Hadamard sequences comprise seventeen Hadamard sequences selected as every eighth sequence in the defined order.

45. (Original) The method of claim 27:

wherein the primary synchronization code consists of 8-bit values A and B and complements of the values A and B;

wherein the value A comprises a sequence $A = \{ 1, 1, 1, 1, 1, 1, -1, -1 \}$; wherein the value B comprises a sequence $B = \{ 1, -1, 1, -1, 1, -1, -1, 1 \}$;

wherein a value C is defined as a sequence $C = \{ A, -B \}$;

wherein the third sequence comprises a 256-bit sequence $\{ C, C, C, -C, C, C, -C, -C, C, -C, C, -C, -C, -C, -C, -C \}$.

46. (Original) The method of claim 45 wherein the step of providing the secondary synchronization code comprises:

performing an exclusive OR operation between the second sequence and the third sequence;

and

providing the secondary synchronization code in response to the exclusive OR operation.

47. (Original) The method of claim 46:

wherein the second sequence comprises a plurality of code words; and

wherein each of the plurality of code words is selected from a plurality of Hadamard sequences.